

**ABSTRACT**

An organic contaminant molecule sensor comprises an electrochemical cell having a solid state oxygen anion conductor, a measurement electrode formed on a first surface of the conductor for exposure to a monitored environment, and a reference electrode formed on a second surface of the conductor for exposure to a reference environment. The electrodes are formed from, or coated with, material for catalysing the dissociative absorption of oxygen. Means are provided for monitoring the potential difference between the electrodes, whereby, in the absence of organic contaminant molecules in the monitored environment, the potential difference between the electrodes assumes a base value  $V_b$  and, upon the introduction of organic contaminant molecules into the monitored environment, the potential difference assumes a measurement value  $V_m$  due to the reaction of the organic contaminant molecules with oxygen in the monitored environment,  $V_m - V_b$  being indicative of the amount of organic contaminant molecules introduced into the monitored environment.